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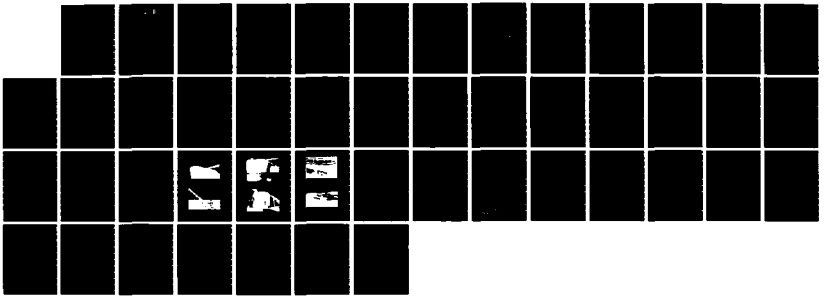

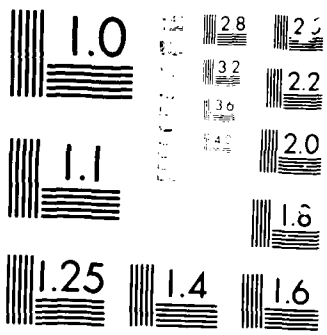
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FPO-1-85 (14)

NAVAL SUBMARINE BASE KINGS BAY FLEET MOORINGS UNDERWATER INSPECTION REPORT

MAY 1985

OCEAN ENGINEERING
AND CONSTRUCTION PROJECT OFFICE
CHESAPEAKE DIVISION
NAVAL FACILITIES ENGINEERING
COMMAND
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This report contains the results of the inspection of three fleet moorings located within the Naval Submarine Base Kings Bay, Georgia. A CHESDIVNAV FACENGCOM-assigned Engineer-in-Charge and divers from Underwater Construction Team One conducted the inspection from 9 to 11 April 1985. (Con't)

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All three moorings are in good condition with the exception of the two "F" Class mooring buoys. A summary of the inspection results is contained in Annex A.

The two "F" Class mooring buoys have been recommended for overhaul during the next maintenance period.

Detailed information and specific comments concerning each of these moorings are included within this report.

ABSTRACT

This report contains the results of the inspection of three fleet moorings located within the Naval Submarine Base Kings Bay, Georgia. A CHESNAVFACENGCOM - assigned Engineer-in-Charge and divers from Underwater Construction Team One conducted the inspection from 9-11 April 1985.

All three moorings are in good condition with the exception of the two "F" Class mooring buoys. A summary of the inspection results is contained in Annex A.

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Table of Contents

NSSB KINGS BAY FLEET MOORINGS INSPECTION

1.0 INTRODUCTION

1.1 Background. Under the COMNAVFACENGCOM Fleet Mooring Maintenance (FMM) Program, CHESNAVFACENGCOM has been assigned the responsibility to plan and conduct periodic diver inspections of all fleet moorings worldwide. In carrying out this responsibility, CHESNAVFACENGCOM designated an Engineer-in-Charge (EIC) to provide inspection planning and onsite technical direction for the underwater inspection of fleet moorings located at the Naval Submarine Base (SUBASE), Kings Bay, Georgia (see Figure 1). The actual underwater portion of the inspection was performed by divers of Underwater Construction Team One (UCT ONE). The inspection was conducted 9-11 April 1985.

1.2 General Mooring History. SUBASE Kings Bay currently operates and maintains three fleet moorings: a Mediterranean-type mooring and two "F" class riser-type moorings. The Mediterranean mooring is installed in approximately 45 feet of water and is utilized almost year-round by USS SIMON LAKE (AS-33). The two "F" class moorings are installed in approximately 50 feet of water and are used for mooring separator floats, camels, and a YC. The locations of the buoys for these three moorings are shown in Figure 2.

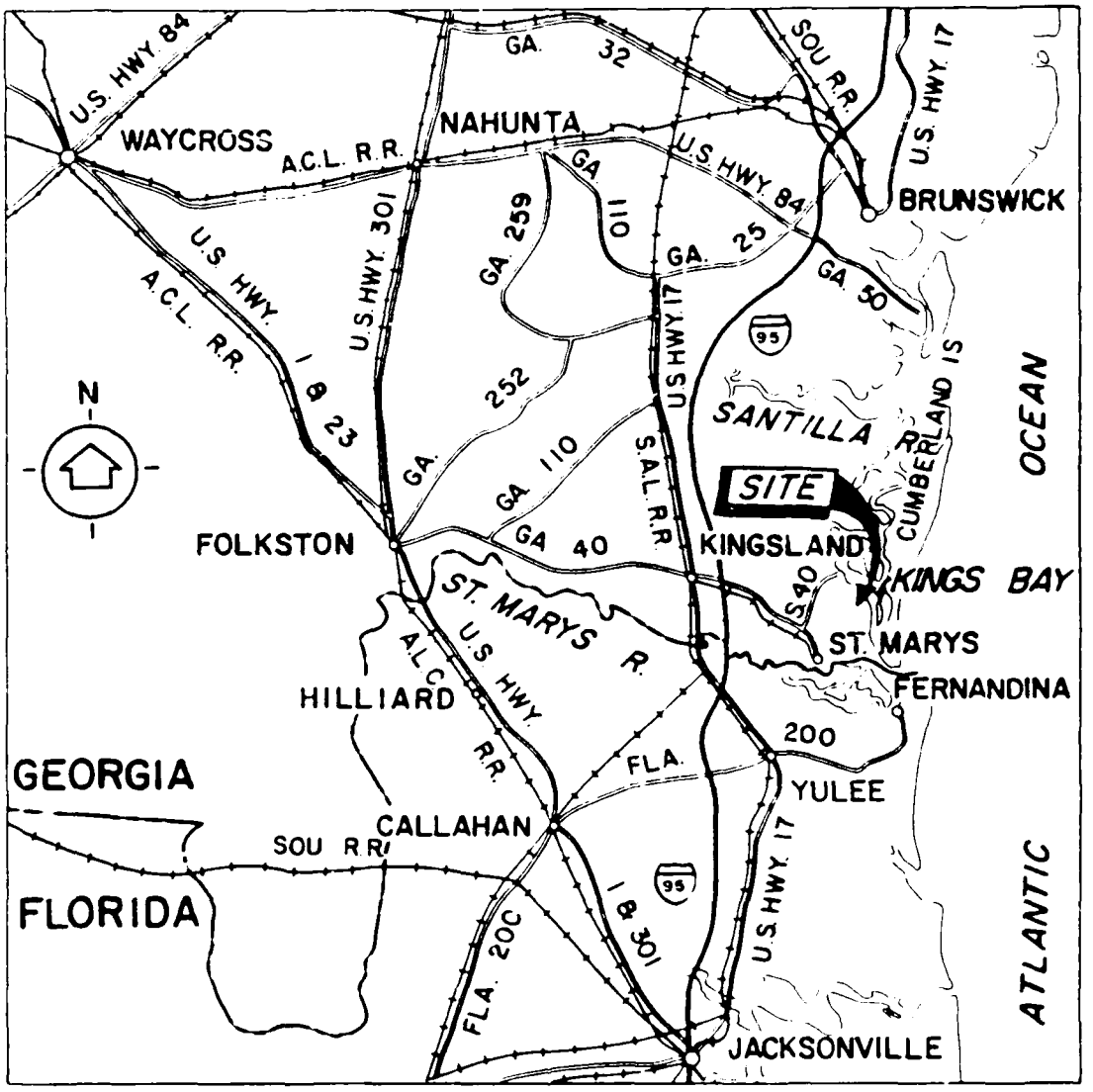


FIGURE 1. Geographic Location of Kings Bay

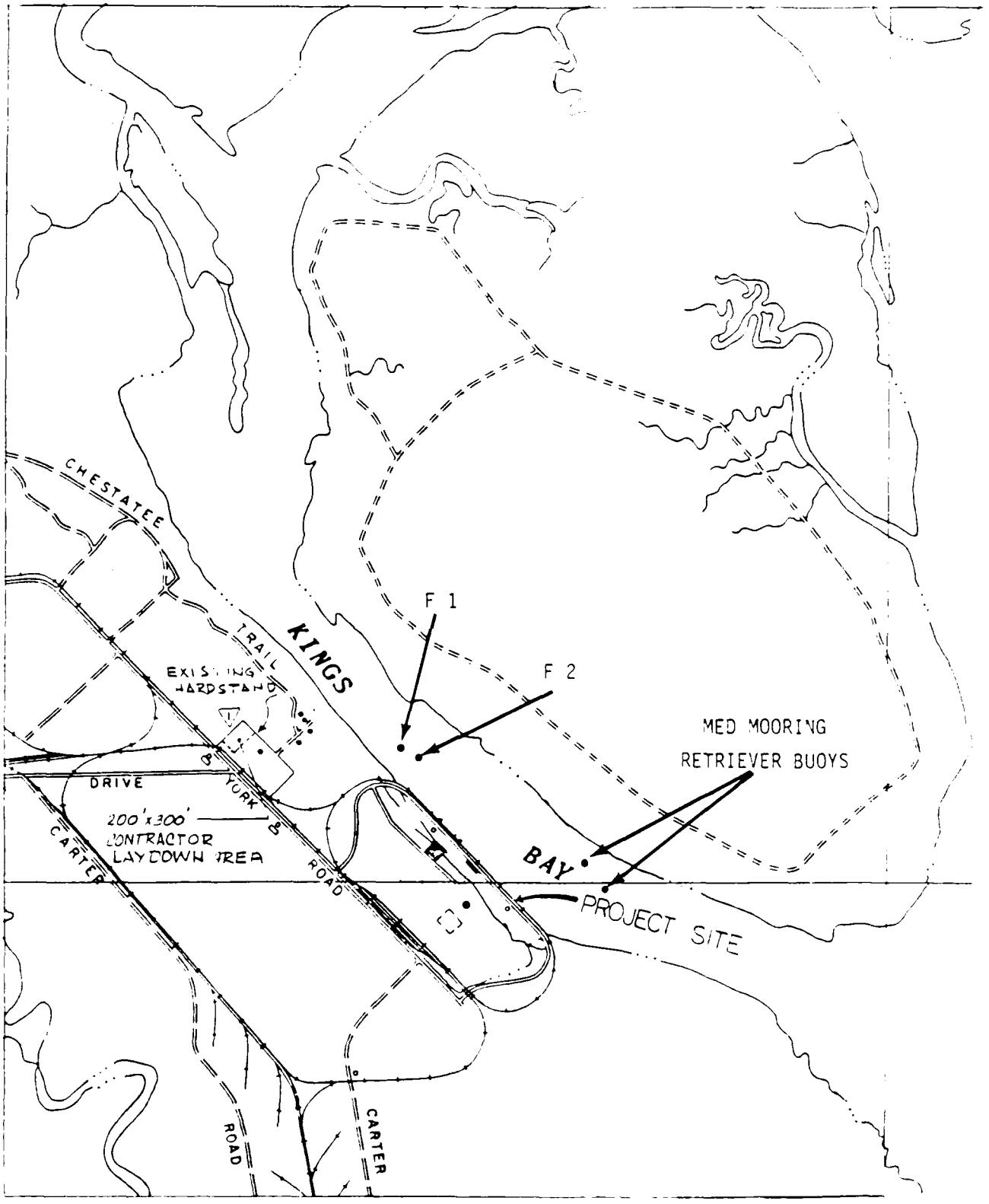


FIGURE 2. Buoy Positions

1.2.1 Mediterranean Mooring. This mooring consists of two chain assemblies each of which terminates at a steel stakepile anchor off the bow of the tender. Each leg consists of 4 1/2 shots (about 400 feet) of 3 1/2-inch Dilok chain, two 12,600-pound cast iron sinkers, and a 300,000-pound design load stakepile. The stern of the tender is tied up to a wharf. During July of 1979, the starboard stakepile failed and pulled loose from the bottom as a result of moderate wind forces of 30 to 40 knots. Since both the port and starboard mooring systems were similar in construction, a decision was made to replace both systems with stakepiles having increased load capacity. The two new stakepile anchors were installed in August 1979. Figure 3 depicts the Mediterranean Mooring.

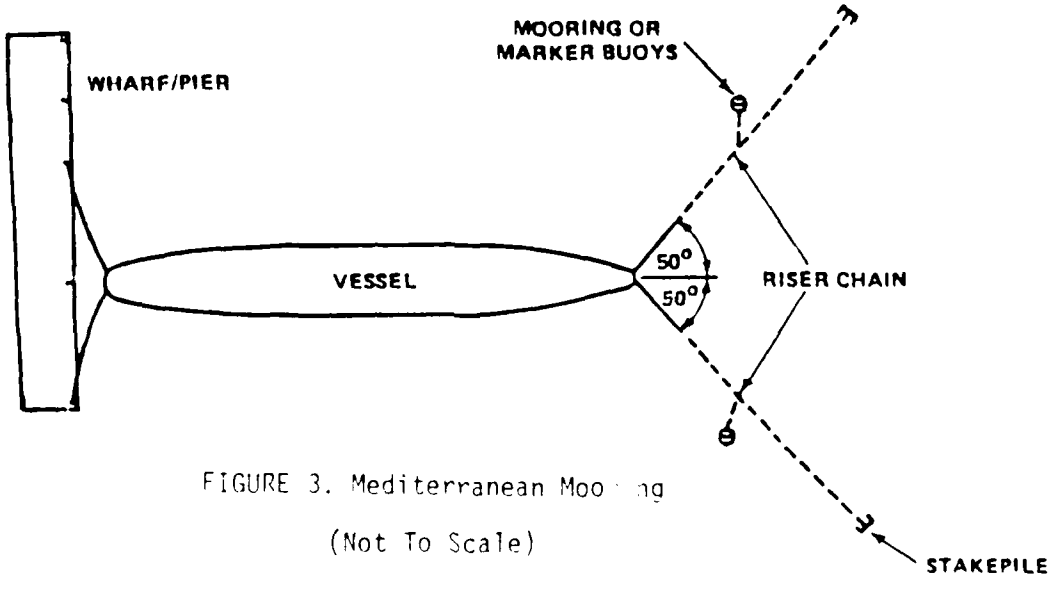


FIGURE 3. Mediterranean Mooring

(Not To Scale)

1.2.2 "F" Class Moorings. Each of the two "F" class moorings consists of a 9 1/2-foot-diameter buoy, a single chain subassembly consisting of mixed 1 3/4-inch forged and Dilok chain, and a 40,000-pound standard Navy stockless anchor (see Figure 4). Both of these moorings were initially installed during the fall of 1979. They were removed for overhaul and subsequent reinstallation during the spring of 1983, and then repositioned in the spring of 1984.

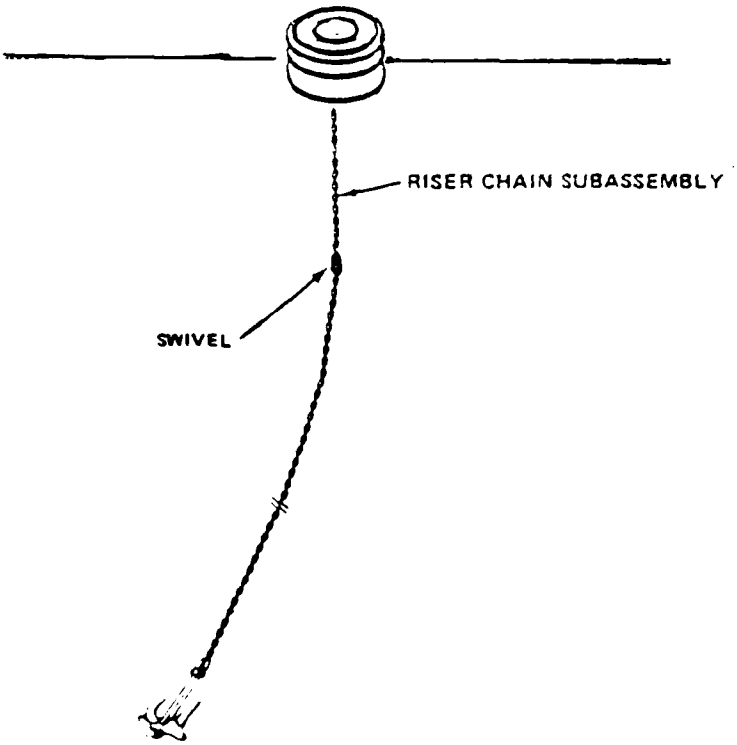


FIGURE 4. "F" Class Mooring Schematic

2.0 INSPECTION PROCEDURES

2.1 Inspection Objectives. The purpose of the mooring inspection was to determine the general condition of the buoys and chain assemblies, and, when possible, to verify or update existing as-built and maintenance records. Divers inspected only a portion of the submerged buoy hull and chain assemblies in order to compile a general description of the mooring's condition. The existence of fairly consistent measurements during this inspection provides a good indication of the mooring's overall condition. It should be kept in mind that periodic underwater inspections are intended as an expedient and relatively inexpensive supplement to accurate maintenance records.

2.1.1 Chain Wire Diameter Measurements. Chain wire diameter measurements are used to evaluate the condition of a mooring. A selective sampling of the wire diameter of chain links and connecting hardware was taken in order to determine the amount of deterioration due to corrosion and wear. At each sampling area, the chain was cleaned to bare metal. Single-link measurements were taken where the chain was slack to detect corrosion loss. Double-link measurements were taken where two links connected under tension to detect the combined effects of corrosion and wear. Chain links and other components

which measured 90 percent or greater of original wire diameter are considered to be in "good" condition. A measurement between 80 and 90 percent of original diameter is considered "fair" condition and is cause for the mooring to be downgraded in classification. Any measurement less than 80 percent is considered "poor" and is cause for the mooring to be declared unsatisfactory for fleet use.

2.1.2 Inspection Limits. Standard underwater inspection procedures do not call for the inspection of any part of the mooring which has been buried or which is below a water depth of 130 feet if scuba gear is used. Anchor chain and riser subassemblies were observed only to the point at which they became buried; no attempt was made to locate and inspect anchors or other mooring materials which were not readily visible.

2.2 Buoy.

2.2.1 Buoy Topside. Each buoy was inspected to determine its general condition. The buoy markings were checked for conformance to those noted in applicable charts. Physical damage, such as holes, dents, or listing, was described. Hatch openings and penetrations were examined, and worn material and rust were reported. The buoy fenders and chafing strips were checked for integrity and secure connection to the buoy. Buoy top jewelry was measured

with calipers to find the overall outside dimensions and areas of most severe reduction in wire size.

2.2.2 Buoy Lower Portion. Divers inspected the buoy below the waterline and recorded the thickness of marine growth and the condition of the buoy bottom.

2.3 Chain Subassemblies. To determine chain wear, each chain was inspected by taking three consecutive double-link measurements using pre-cut gauges and/or calipers, at both ends and at the center of its length. To determine original chain size, divers took single-link measurements of the wire diameter and measured the link length (link length should be six times the wire diameter).

3.0 INSPECTION SUMMARY

An indepth discussion of the inspection results is presented in Annex A. Annex B contains photographs, Annex C presents survey data, and Annex D contains copies of messages pertaining to this inspection. An evaluation of the data gathered during the inspection indicates the following:

Mediterranean Mooring:

- Visible sections of the bow and stern legs are in good condition.
- The northern stern leg contains 12 consecutive detachable links. This nonstandard configuration should be replaced with chain during the next scheduled maintenance period.
- The retriever buoy chain measures between 80 and 90 percent which is normally cause for a downgrade in classification. However, minimal loading is applied to these chains and it is recommended that they be overhauled during the next maintenance cycle.
- The retriever buoys themselves are in good condition with small amounts of rust showing through the paint and some peeling at the water line.

"F" Class Moorings:

- The chain of the two moorings are in good condition with chain measurements greater than 90 percent of original wire diameter.
- The buoys have severe surface rust and the anodes are completely depleted. These buoys should be overhauled during the next maintenance period.

4.0 MOORING INSPECTION COMMENTS AND RECOMMENDATIONS

The three moorings inspected are in satisfactory condition for continued use. However, the two buoys of the "F" Class moorings should be recovered and refurbished as required.

ANNEX A

FLEET MOORING INSPECTION RESULTS

This Annex contains the following information for each mooring:

1. A summation of the inspection data obtained by the CHESNAVFACENGCOM EIC and UCT ONE divers.
2. A diver reporting form.

INSPECTION RESULTS

MEDITERRANEAN MOORING

Bow Anchor Chain Subassemblies. The two legs consist of 3 1/2-inch Dilok chain. All double-link measurements of these legs indicated over 90 percent of the original wire diameter. The port leg bears approximately 360 degrees magnetic from the bow of the ship, and the starboard leg bears approximately 100 degrees (see Figure A-1). Both legs are under tension. Inclinometer readings were recorded on each leg as shown below.

	Starboard Leg	Port Leg
Angle at the Surface	68°	73°
Angle at the Bottom	82°	82°
Chain Length*	140'	115'

*As-builts could not be verified beyond the point the chain entered the mud.

Buoys. Each of the two bow legs has a 9 1/2-foot-diameter drum-type buoy with a tension bar. Each buoy has approximately 37 inches of freeboard, moderate rust and peeling paint, and 2 inches of marine growth on its bottom. Each has two rubber fenders and chafing rails.

The retriever buoys are connected to the bow leg chains by 1 3/4-inch chain. Measurements of this chain near the mudline were between 80 and 90 percent of

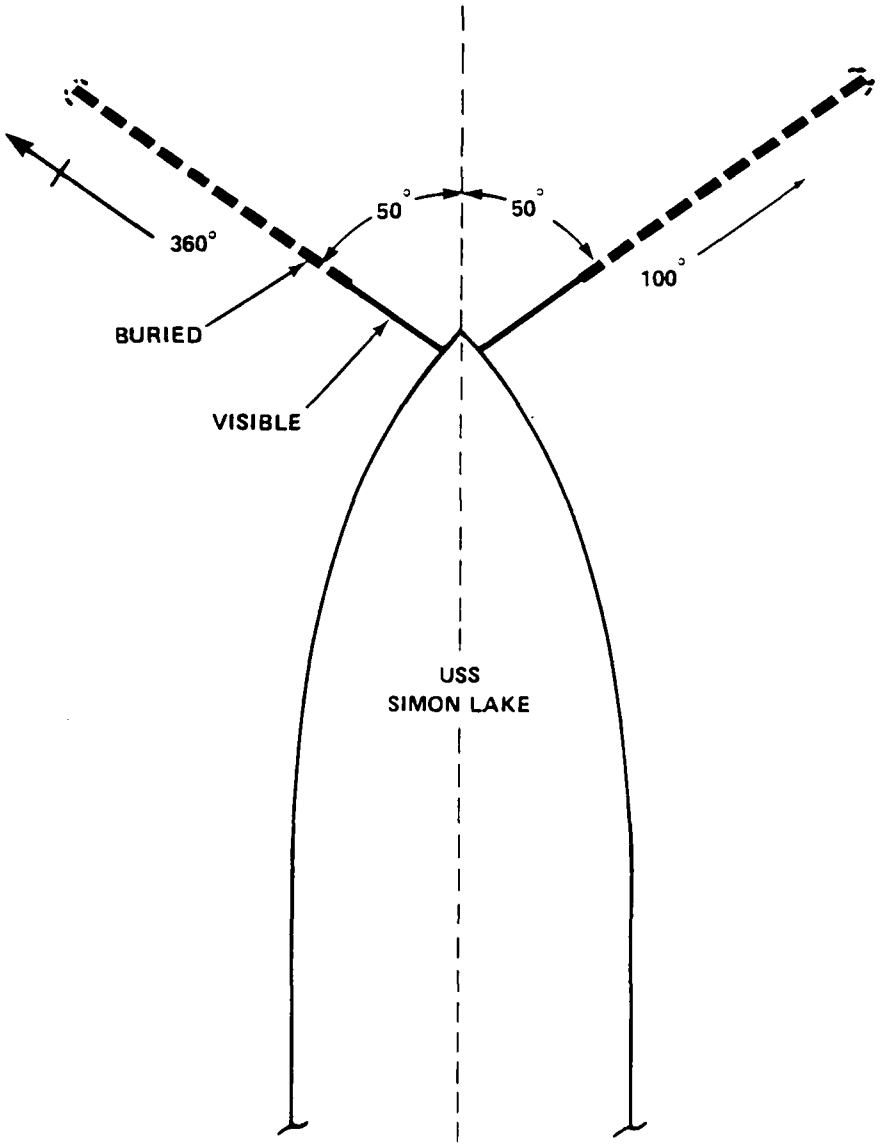


Figure A-1. USS SIMON LAKE Bow Legs

their original wire diameter. Although design drawings indicate that the 1 3/4-inch chain is attached to the bow leg chains at the first sinker, this could not be verified since the leg chain and sinker were both buried in the mud.

Stern Legs. Two 3 1/2-inch Dilok chain legs secure the stern of the Tender to the eastern end of the wharf at SUBASE Kings Bay. Both legs are rusting and the paint on them is blistering. Double- and single-link measurements were all above 90 percent of the original wire diameter. A schematic diagram of the Mediterranean mooring's stern legs is contained in Figure A-2.

Comments and Recommendations:

- o Overall, the Mediterranean mooring is in good condition and satisfactory for continued fleet use.
- o Due to measurements between 80 and 90 percent near the mudline, the retriever buoy chain should be refurbished during the next scheduled mooring overhaul.
- o In its current configuration, the northern stern leg contains 12 consecutive detachable links. During the next scheduled overhaul, this unusual and nonstandard configuration should be replaced with a comparable length of 3 1/2-inch common "A" links.

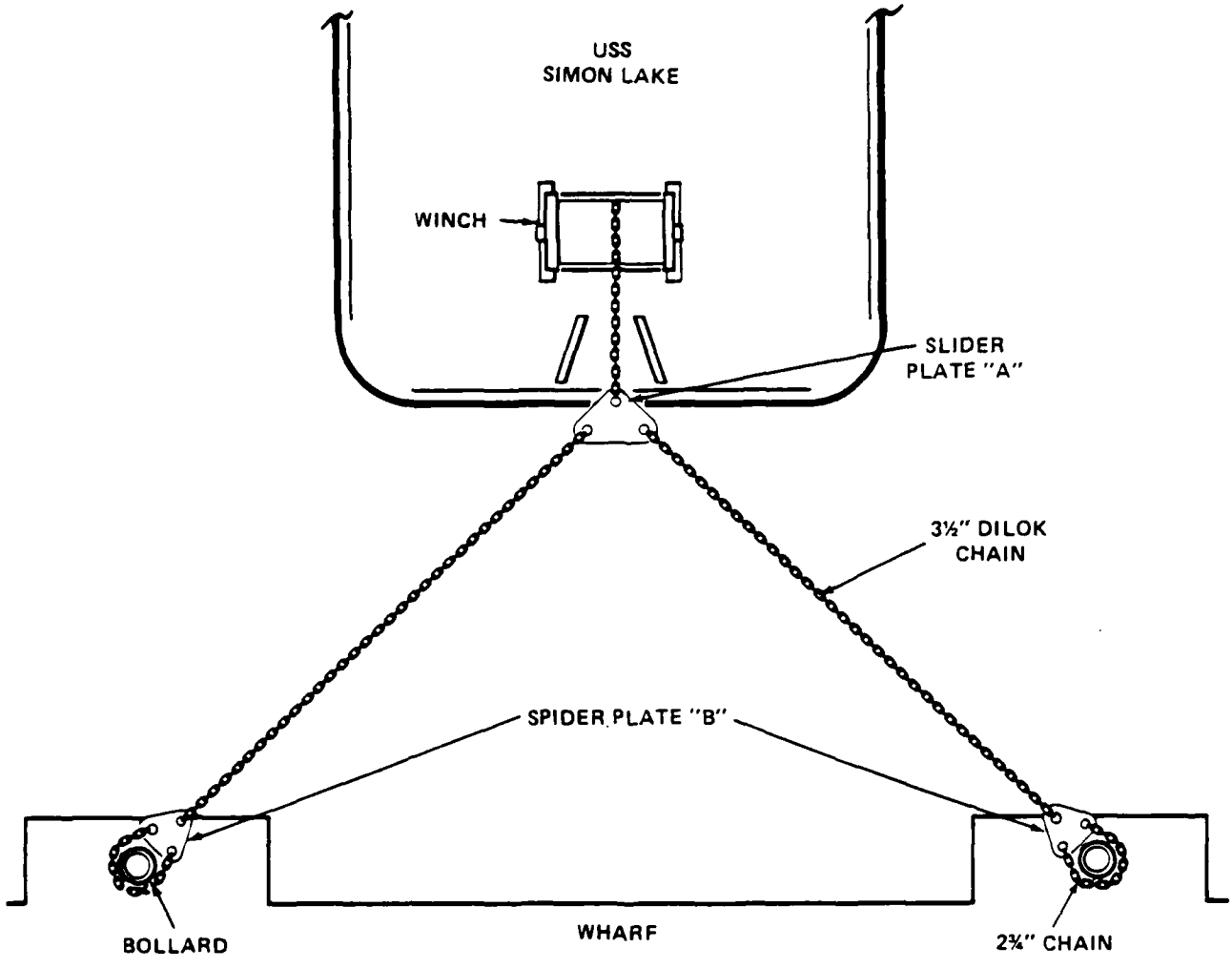


Figure A-2. USS SIMON LAKE (AS 33) Stern Legs

MOORING NO.: STBD BOW CLASS: MEDITERRANEAN LOCATION: SUBASE KINGS BAY, GEORGIA LAT: 30° 47' 46.6"N LONG: 81° 30' 28.229"E

BUOY TYPE: DRUM (PICK UP) ANCHOR SIZE/TYPE: STAKE PILE WATER DEPTH: 45' VISIBILITY: 0-1' BOTTOM TYPE: MUD/SILT

DATE: 9 APRIL 1985 ENGINEER-IN-CHARGE: P. KETRICK DIVERS: KRONK/DORVAL/UZZI/EMBORSKI

COMPONENTS		GAUGE SIZE	CONDITION								COMMENTS
			LINK LENGTH	SINGLE LINK %			DOUBLE LINK %			DEPTH	
				90+	80+	80–	90+	80+	80–		
BUOY HARDWARE											9½' DIAMETER PICK UP BUOY. HEAVY
	NONE										MARINE GROWTH ON BOTTOM. ABOUT
											30-40% OF PAINT COATING MISSING.
											LIGHT SURFACE ROST. FREEBOARD 37".
											FENDERS/CHAFING RAIL OK.
PICK UP CHAIN	NEAR BUOY	1 3/4"	10½"				√√√			0'	CAST PICK UP CHAIN FROM BUOY TO
	MIDDLE	↓	↓				√√√			25'	BOTTOM. MEASUREMENTS ABOVE MUD LINE
	BOTTOM	↓	↓					√√√		45'	BETWEEN 80-90%. HEAVY PITTING NEAR
											BOTTOM.
GROUND LEG STBD	UPPER END	3½"	21"				√√√				MEASUREMENTS > 90%. HEAVY RUST
	MIDDLE	↓	↓				√√√				PITTING. WATERLINE TO MUD 128'. HEAVY
	ENTERS BOTTOM	↓	↓				√√√				MARINE GROWTH. CHAIN TWISTED.
GROUND LEG PORT	UPPER END										
	MIDDLE										
	ENTERS BOTTOM										
STERN LEGS	UPPER END	3½"	21"				√√√				NEWLY PAINTED BUT PAINT BLISTERING.
	MIDDLE	3½"	21"				√√√				TWO AJL AND SEVEN "A" LINKS AROUND THE
	BOLLARD	2 3/4"	16½"				√√√				BOLLARD. CHAIN IN GOOD CONDITION.

FOR ADDITIONAL LEGS USE OTHER SHEETS

SHEET 1 OF 2

MOORING NO.: PORT BOW CLASS: MEDITERRANEAN LOCATION: SUBASE KINGS BAY, GEORGIA LAT: 30° 47' 49.035" LONG: 81° 30' 31.075" E

BUOY TYPE: DRUM (PICK UP) ANCHOR SIZE/TYPE: STAKE PILE WATER DEPTH: 45' VISIBILITY: 0-1' BOTTOM TYPE: MUD/SILT

DATE: 9 APRIL 1985 ENGINEER-IN-CHARGE: P. KETRICK DIVERS: KRONK/DORVAL/UZZI/EMBERSKI

COMPONENTS		GAUGE SIZE	CONDITION								COMMENTS
			LINK LENGTH	SINGLE LINK %			DOUBLE LINK %			DEPTH	
				90+	80+	80–	90+	80+	80–		
BUOY HARDWARE											9½' DIAMETER PICK UP BUOY. HEAVY
	NONE										MARINE GROWTH. ABOUT 10-20% OF THE
											PAINT IS GONE AND REPLACED WITH
											LIGHT RUST. FENDERS/CHAFING
											RAIL OK.
PICK UP CHAIN	NEAR BUOY	1¾"	10½"				√√√				CAST CHAIN FROM BUOY TO CHAIN LEG.
	MIDDLE	↓	↓				√√√				MEASUREMENTS AT MUD LINE BETWEEN 80-
	BOTTOM	↓	↓					√√√			90%. HEAVY PITTING NEAR BOTTOM.
GROUND LEG STBD	UPPER END										
	MIDDLE										
	ENTERS BOTTOM										
GROUND LEG PORT	UPPER END	3½"	21"				√√√				HEAVY MARINE GROWTH. WATERLINE TO MUD 10'.
	MIDDLE	↓	↓				√√√				CHAIN TWISTED. EXCESS SHACKLES AT 32' & 46'.
	ENTERS BOTTOM	↓	↓				√√√				EXTRA CHAIN FROM 32' SHACKLE TO BOTTOM (10° FROM VERTICAL)
STERN LEGS	UPPER END	3½"	21"				√√√				NEW PAINT BLISTERING. CHAIN IN GOOD
	MIDDLE	3½"	21"				√√√				CONDITION. TWO AJL AND SEVEN "A" LINKS
	BOLLARD	2¾"	16½"				√√√				AROUND THE BOLLARD.

FOR ADDITIONAL LEGS USE OTHER SHEETS

SHEET 2 OF 2

"F" CLASS MOORING NUMBER ONE

Background. Neither of the two "F" class moorings operated and maintained by SUBASE Kings Bay are numbered or have distinctive markings. Thus, the northwest mooring was designated Mooring Number One by the inspection team. (See Figure 2.)

Buoy. The buoy is a 9 1/2-foot-diameter, 5-foot-high drum buoy with a tension bar. It has two rubber fenders mounted in continuous welded brackets, one near the top and the other near the bottom of the side plating. The bottom of the buoy is covered with a light coating of marine growth and there is a 37-inch freeboard. There is no protective coating applied to the buoy, and the entire buoy has a coating of rust. The four zinc anodes installed on the bottom of the buoy in 1984 have been totally depleted.

Anchor Leg Subassembly. The anchor leg consists of 1 3/4-inch mixed Dilok and forged chain which has a heavy coating of marine growth. Although the chain has some heavy pitting (1/8- to 1/4-inch deep), all measurements were greater than 90 percent of the chain's original wire diameter.

Anchor Subassembly. The anchor and lower end of the chain subassembly are buried in the bottom and were not visible for inspection.

Comments and Recommendations:

- o This mooring is in satisfactory condition for continued fleet use.
- o The buoy should have a protective coating applied.
- o New zinc anodes should be installed on the buoy's bottom during the next maintenance period.

MOORING NO.: 1 (NW.) CLASS: F LOCATION: SUBASE KINGS BAY, GEORGIA LAT: 30° 48' 0.431" N LONG: 81° 30' 54.812" E

BUOY TYPE: DRUM ANCHOR SIZE/TYPE: 40K STOCKLESS WATER DEPTH: 50' VISIBILITY: 0-1' BOTTOM TYPE: MUD/SILT

DATE: 9 APRIL 1985 ENGINEER-IN-CHARGE: P. KETRICK DIVERS: UZZI/EMBORSKI

COMPONENTS		GAUGE SIZE	CONDITION								COMMENTS
			LINK LENGTH	SINGLE LINK %			DOUBLE LINK %			DEPTH	
				90+	80+	80–	90+	80+	80–		
BUOY HARDWARE	SHACKLE	2½"									9½' DIAMETER DRUM TYPE BUOY.
	SHACKLE	2"									MODERATE HULL AND TOP RUST.
											BUOY ANODES COMPLETELY DEPLETED.
											LIGHT MARINE GROWTH ON BOTTOM. TWO
											RUBBER FENDERS, NO PROTECTIVE COVER
RISER	NEAR BUOY	1¾"	10½"				√√√				CAST CHAIN > 90%, SOME PITTING
	MIDDLE	↓	↓				√√√				⅛" TO ¼" DEEP, SWIVEL 9 "A" LINKS
	BOTTOM	↓	↓				√√√				AND A DETACH BELOW BUOY.
GROUND RING											NONE
GROUND LEG NO. A	UPPER END										
	MIDDLE										NONE
	ENTERS BOTTOM										
GROUND LEG NO.B	UPPER END										
	MIDDLE										NONE
	ENTERS BOTTOM										
GROUND LEG NO. C	UPPER END										
	MIDDLE										NONE
	ENTERS BOTTOM										

FOR ADDITIONAL LEGS USE OTHER SHEETS

SHEET 1 OF 1

CHESNAVFACENGCOM REPORT FPO-1-85(14), "SUBASE KINGS BAY MOORING UNDERWATER INSPECTION REPORT", MAY 1985

"F" CLASS MOORING NUMBER TWO

Background. Neither of the two "F" class moorings operated and maintained by SUBASE Kings Bay are numbered or have distinctive markings. This mooring, which is located about 400 yards to the north of the USS SIMON LAKE Mediterranean mooring, was designated Mooring Number Two by the inspection team. (See Figure 2.)

Buoy. The buoy is a 9 1/2-foot-diameter, 5-foot-high drum buoy with a tension bar and 37 inches of freeboard. It has two rubber fenders with continuous welded brackets, one near the top and the other near the bottom of the side plating. There is no protective coating applied to the buoy, and the entire buoy has a coating of rust. The anodes installed on the bottom of the buoy are completely depleted. The 7-inch-high chafing rail is bent and badly rusted.

Anchor Leg Subassembly. The single leg is 1 3/4-inch Dilok chain with all measurements greater than 90 percent of the chain's original wire diameter. There is heavy marine growth on the chain as well as heavy pitting (1/8- to 1/4-inch deep).

Anchor Subassembly. The anchor is buried in the mud and was not visible for inspection.

Comments and Recommendations:

- o The mooring is in satisfactory condition for fleet use.
- o The buoy should have a protective coating applied.
- o New zinc anodes should be installed on the buoy's bottom during the next maintenance period.

MOORING NO.: 2 (S.E.) CLASS: F LOCATION: SUBASE KINGS BAY, GEORGIA LAT: 30° 47' 59.032"N LONG: 81° 30' 52.311" E

BUOY TYPE: DRUM ANCHOR SIZE/TYPE: 40 K STOCKLESS WATER DEPTH: 50' VISIBILITY: 0-1' BOTTOM TYPE: MUD/SILT

DATE: 10 APRIL 1985 ENGINEER-IN-CHARGE: P. KETRICK DIVERS: UZZI / EMBORSKI

COMPONENTS		GAUGE SIZE	CONDITION								COMMENTS
			LINK LENGTH	SINGLE LINK %			DOUBLE LINK %			DEPTH	
				90+	80+	80–	90+	80+	80–		
BUOY HARDWARE	SHACKLE	2½"									9½' DIAMETER DRUM TYPE BUOY.
											TWO RUBBER FENDEES. CHAFING
											RAIL BENT AND RUSTED. ANODES
											COMPLETELY DEPLETED. NO
											PROTECTIVE COATING.
RISER	NEAR BUOY	1 3/4"	10½"				√√√				HEAVY MARINE GROWTH ON CHAIN
	MIDDLE	↓	↓				√√√				AND HEAVY PITTING (½" to ¼" DEEP)
	BOTTOM	↓	↓				√√√				SWIVEL 16 LINKS BELOW BUOY.
GROUND RING											NONE
GROUND LEG NO. A	UPPER END										
	MIDDLE										NONE
	ENTERS BOTTOM										
GROUND LEG NO.B	UPPER END										
	MIDDLE										NONE
	ENTERS BOTTOM										
GROUND LEG NO. C	UPPER END										
	MIDDLE										NONE
	ENTERS BOTTOM										

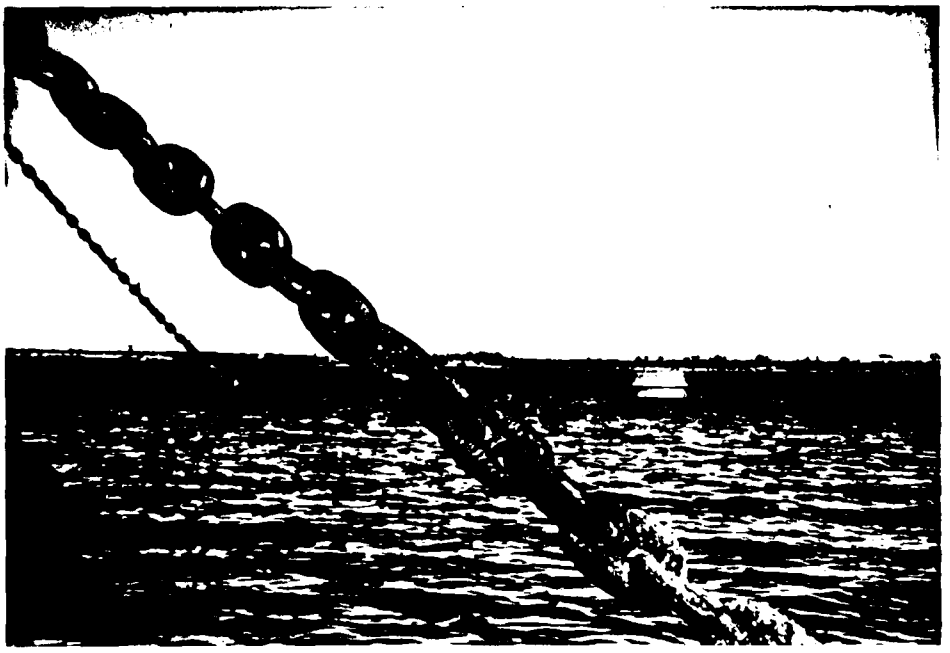
FOR ADDITIONAL LEGS USE OTHER SHEETS

SHEET 1 OF 1

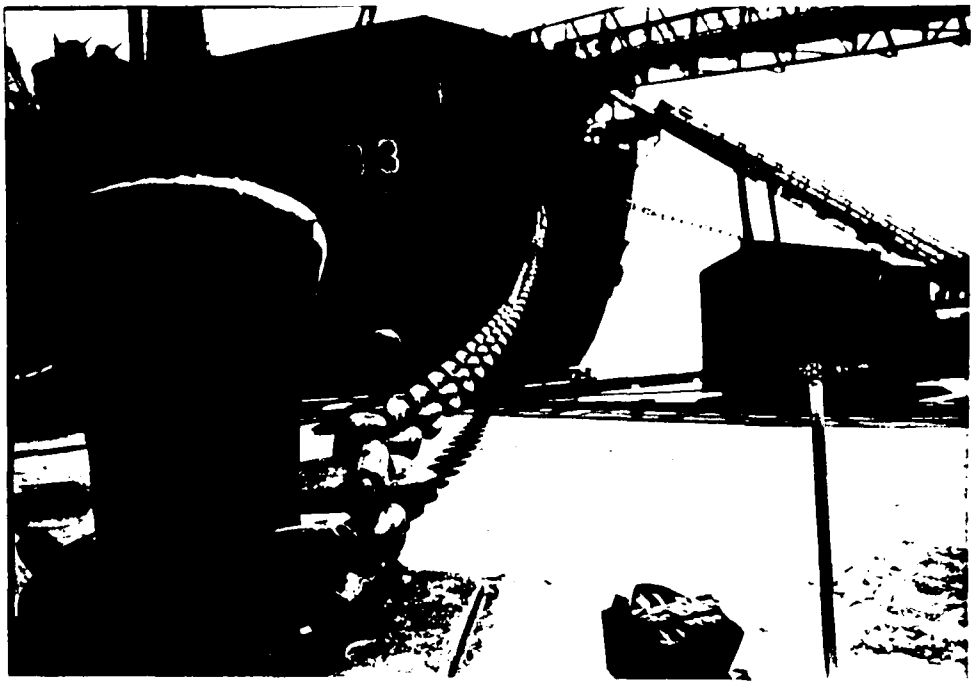
ANNEX B

PHOTOGRAPHS

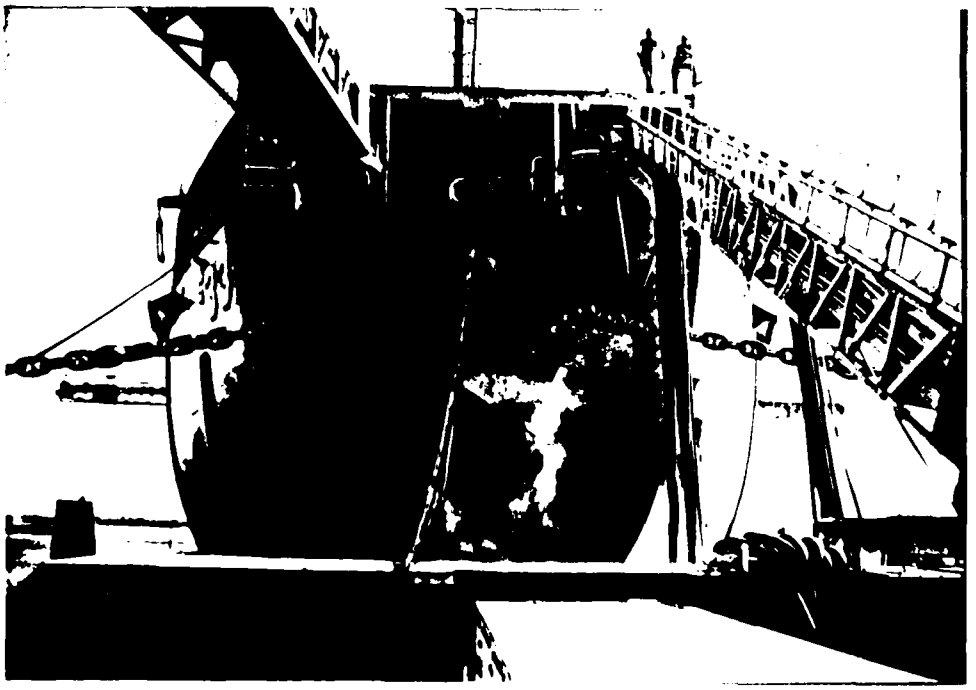
Mediterranean Mooring Bow Legs - Note Twisting.



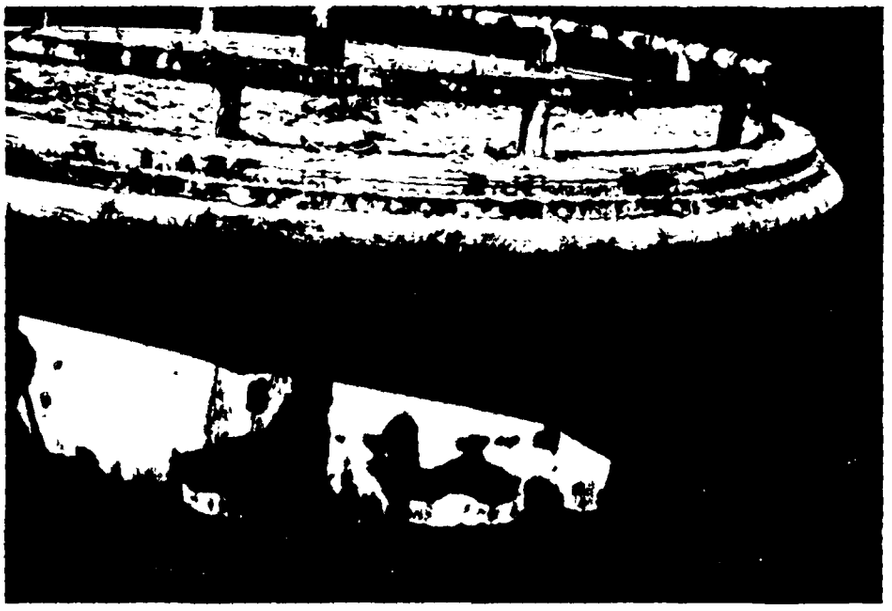
Mediterranean Mooring - Note The Configuration
Of The Bow Legs And Condition Of The Chain.



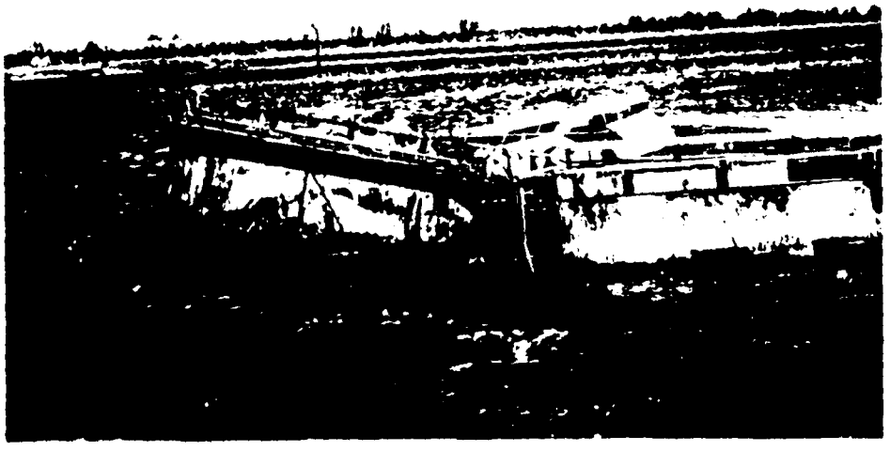
Mediterranean Mooring Stern Leg To Bollard



USS SIMON LAKE (AS 33) Stern Aspect



Typical Condition Of The Mediterranean Mooring Retriever Buoys.



"F" Class Mooring Number 2. This Shows The Typical Condition Of The Two "F" Class Moorings. Deep Draft Camels Are Moored To The Buoy.

ANNEX C

SURVEY DATA

SURVEY OF THE KINGS BAY BUOYS

A survey of the four buoys maintained by SUBASE Kings Bay was conducted on 10 April 1985. This Annex contains the data gathered to determine the positions of each of the four buoys. Figure C-1 depicts the locations of the five ashore sites used during the survey.

Figure C-1 Legend:

A - Starboard Buoy of the Mediterranean Mooring

B - Port Buoy of the Mediterranean Mooring

C - Top of the Hill Between PCM-8 and FORSAKEN 2

F-1 - Northwest "F" Class Buoy Site

F-2 - Southeast "F" Class Buoy Site

KB-3 - Defense Mapping Agency Benchmark

KB-4 - Defense Mapping Agency Benchmark

FORSAKEN-2 - Established Benchmark

PCM-8 - Permanent Control Monument

Descriptions of the benchmarks, their geographic locations, and the angles measured from each benchmark follow.

Description of Benchmark C - located atop a hill or large mound of dirt and grass covering a fuel storage tank. The "hill" is readily visible and is about halfway between PCM-8 and FORSAKEN 2. This site was selected to be used during the survey because of its elevation.

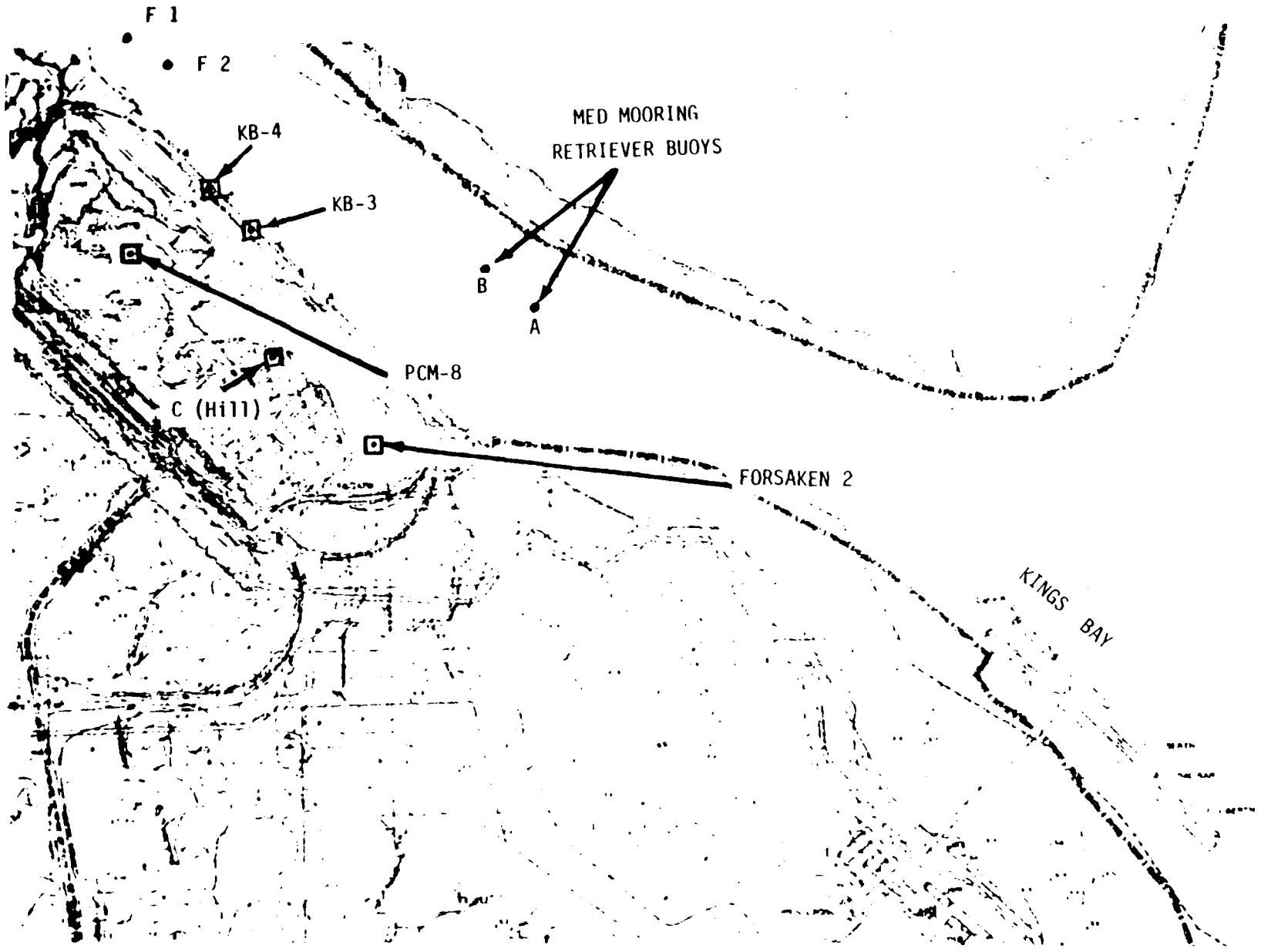


FIGURE C-1. Primary Survey Sites

Description of Benchmark KB-3 - a 2-inch brass disk inscribed with "KB-3." This disk is embedded in concrete and flush with the surface of the concrete. It is located near the edge of the wharf about 2310 feet from the southeastern end of the wharf.

Description of KB-4 - a brass disk (identical to KB-3's) inscribed "KB-4" and similarly placed in concrete. It is located on the same wharf about 303 feet northwest of KB-3.

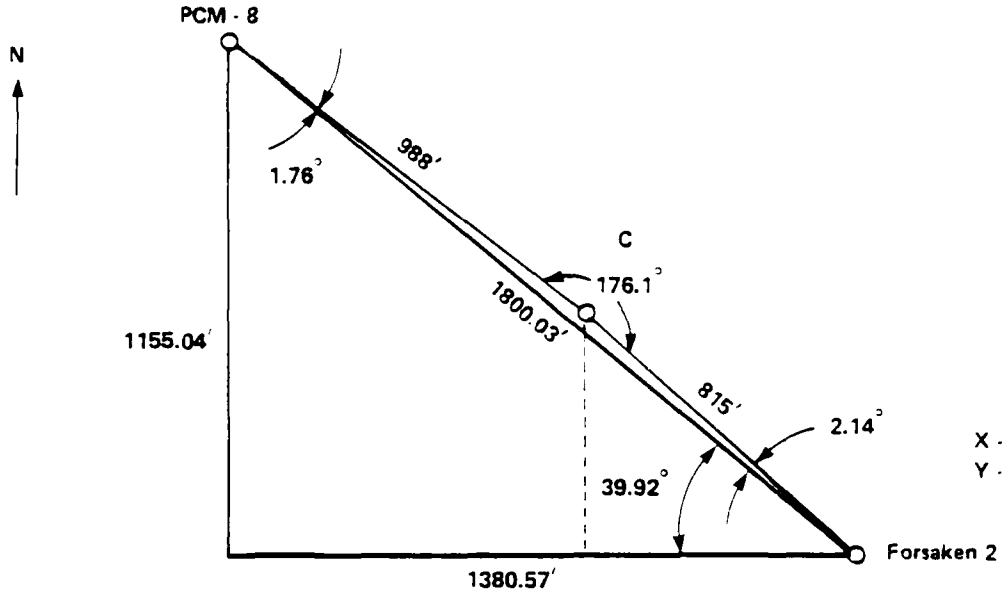
Description of PCM-8 - a Permanent Control Monument consisting of a 10-inch-diameter by 36-inch-high concrete monument with a 2-inch brass disk bearing "OICC TRIDENT Contract No. N68248-80-C-0105 and PCM-8." It is protected by four 4-inch-diameter steel pipes set in concrete and is located behind the maintenance building near the tennis courts.

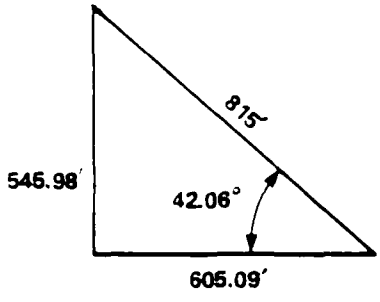
Description of FORSAKEN 2 - a concrete monument similar to PCM-8 with its brass disk inscribed "FORSAKEN 2." This monument is located in swamp water and can only be reached at low tide. The elevation at this site is lower than the wharf.

Mooring/Survey Site Corrdinates:

SITE	LATITUDE	LONGITUDE
A	30°47'44.416" N	81°30'28.229" E
B	30°47'47.035" N	81°30'31.075" E
C	30°47'42.381" N	81°30'46.525" E
F-1	30°48'0.431" N	81°30'54.812" E
F-2	30°47'59.032" N	81°30'52.311" E
KB-3	30°47'49.844" N	81°30'47.234" E
KB-4	30°47'52.095" N	81°30'49.701" E

Pt. C: Found by turning the transit clockwise 176.1° from Forsaken 2 to PCM-8





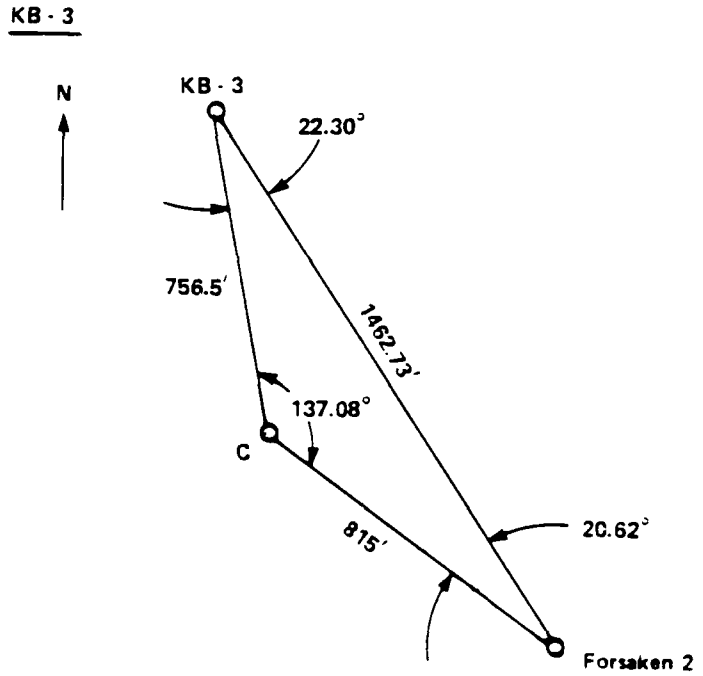
Coordinates of C
X - 705262.17 E
Y - 289748.76 N

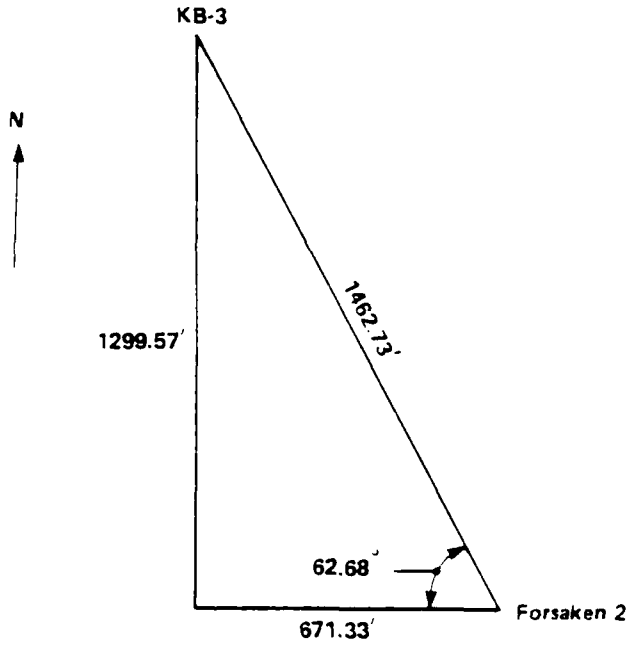
LAT: 30° 47' 42.381" N

LONG: 81° 30' 46.525" E

* Coordinates are all in Transverse Mercator East Georgia Zone.

KB-3: Found by turning the transit counterclockwise 137.08° from Forsaken 2 to KB-3



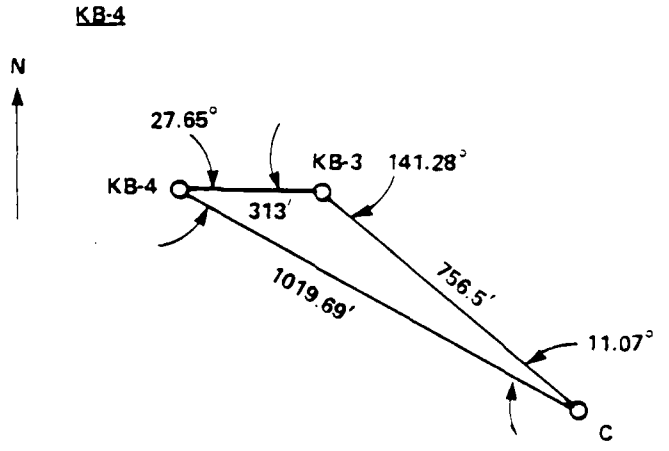


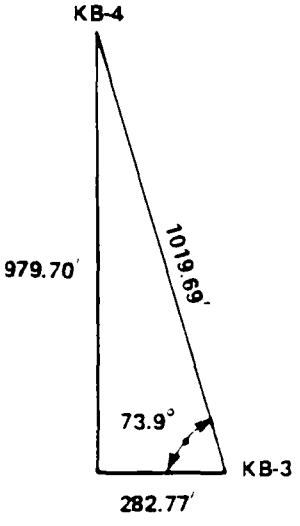
Coordinates of KB-3
X 705195.93 E
Y 290502.35 N

LAT: 30° 47' 49.844" N

LONG: 81° 30' 47.234" E

KB-4: Found by turning the transit clockwise 141.28° from Pt. C to KB-4





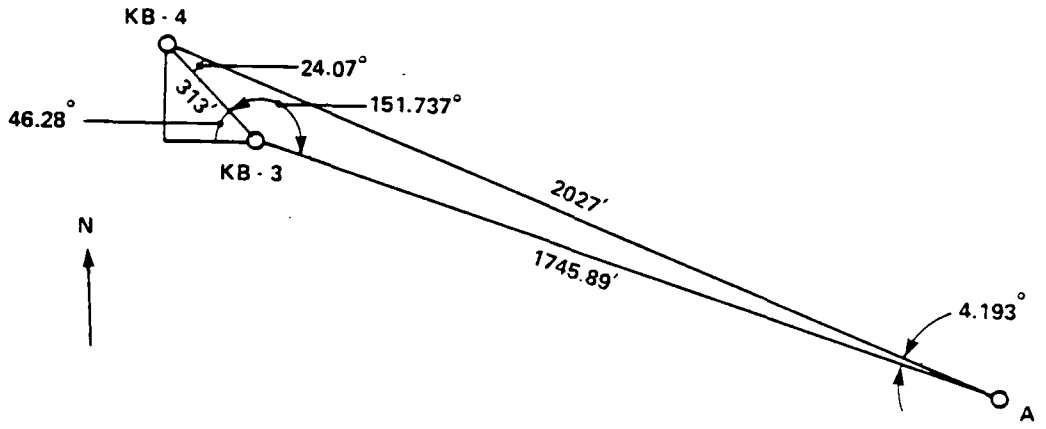
Coordinates of KB-4
X · 704979.40 E
Y · 290728.46 N

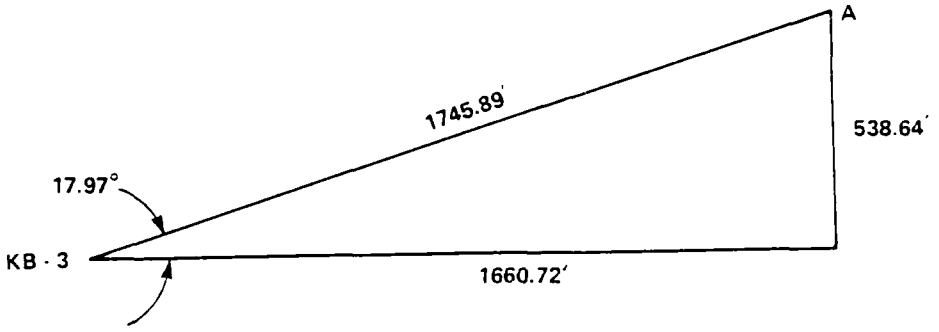
LAT: 30° 47' 52.095" N

LONG: 81° 30' 49.701" E

A baseline established between KB-3 and KB-4

Med Moor-Starboard Buoy (A): Turned the transit counterclockwise 24.07°





Coordinates of A

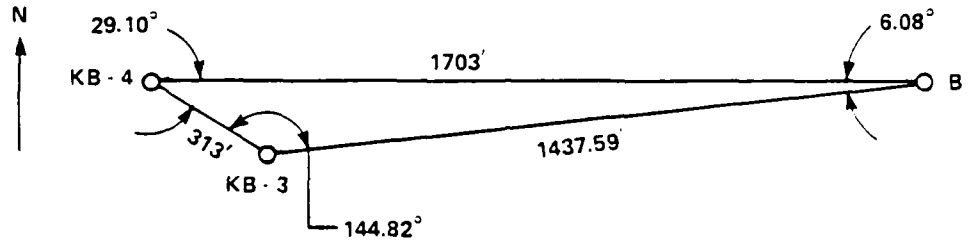
X - 706856.65 E

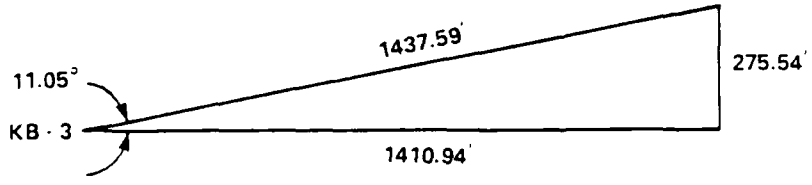
Y - 289963.71 N

LAT: 30° 47' 44.416'' N

LONG: 81° 30' 28.229'' E

Med Moor-Port Buoy (B): Turned the transit counterclockwise 29.10°



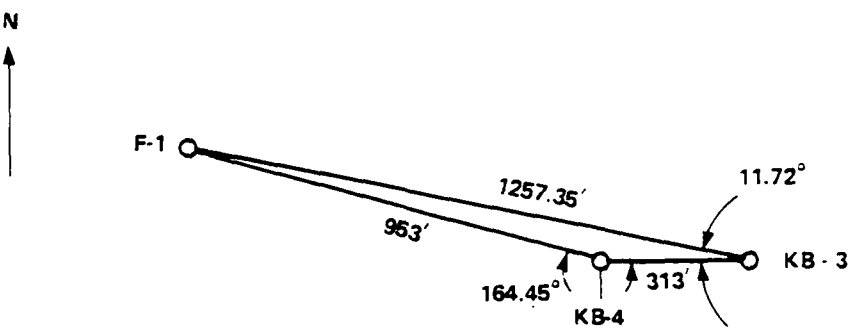


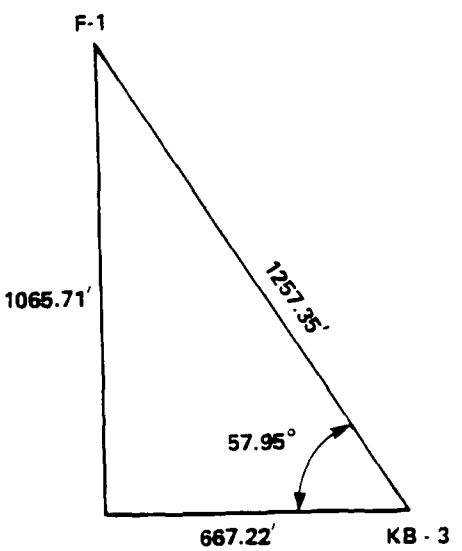
Coordinates of B
X - 706606.87 E
Y - 290226.81 N

LAT: 30° 47' 47.035" N

LONG. 81° 30' 31.075" E

F-1 Mooring: Turned the transit clockwise 164.05°



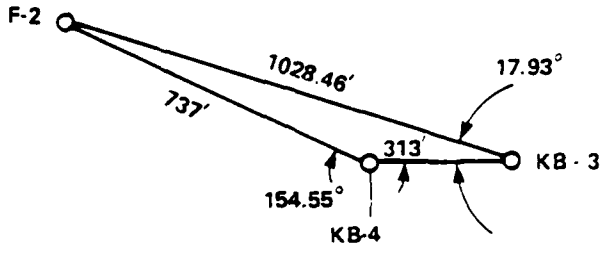


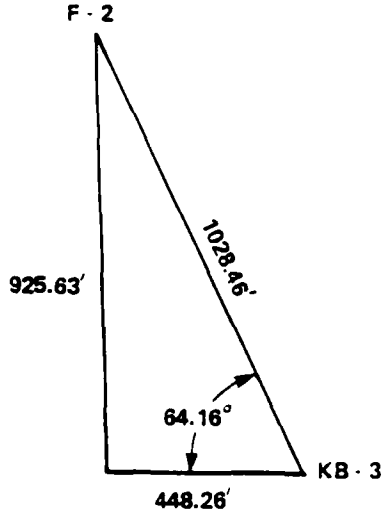
Coordinates of F-1
X - 704528.71 E
Y - 291568.06 N

LAT: 30° 48' 0.431" N

LONG: 81° 30' 54.812" E

F-2 Mooring: Turned the transit clockwise 154.55°





Coordinates of F - 2
X - 704747.67 E
Y - 291427.98 N

LAT: 30° 47' 59.032" N

LONG: 81° 30' 52.311" E

ANNEX D

REFERENCES

Naval Speedletter

X | UNCLASSIFIED | 9 May 1985

Craig Pennington, FPO-1PM3
202-433-3881

To: Commanding Officer
Naval Submarine Support Base
Kings Bay Kingsland, GA 31547

INSTRUCTIONS

1. Both addresses must be unclassified or window envelope or bulk mailing is precluded. Include activity codes when known. Use dots and brackets as guides for window envelope addresses.

2. Give priority to processing, routing, and action required. Avoid time consuming controls.

3. In order to speed processing, a readily identifiable, special window envelope, OPNAV 5216/145A, Speedletter Envelope, is provided for unclassified speedletters where bulk mailing is not used. Other window envelopes also may be used. In bulk mail, speedletters should be placed on top of regular correspondence.

Fold STANDARD REFERENCES AND ENCLOSURES (IF ANY) TEXT AND SIGNATURE BLOCK

SUBJ: FLEET MOORING INSPECTION

1. A CHESDIV/UCT ONE Underwater Inspection of the Fleet Moorings at SUBASE Kings Bay was conducted 8 - 11 Apr 85. The following is a preliminary report of the results.

2. The Med Mooring is in good condition except that 12 detachable links in a row are connected above the swivel on the port stern leg. It is recommended that these detachable links be replaced with regular chain links during the next scheduled overhaul.

3. The chain of the two F Moorings are in good condition.

4. The anodes attached to the buoys of the two F Moorings are completely deteriorated. During the next scheduled overhaul the buoys should be painted and new anodes attached.

5. A detailed report of the final evaluation of the moorings condition will follow. POC at this Command is C. Pennington at (202) 433-3881 or A/V
Fold 288-3881.

A. M. PARISI
By direction

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Chesapeake Division
Naval Facilities Engineering Command
Washington, DC 20374-2121

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